

## CLAIMS

1. A shape information coding method of coding shape information for identifying a location on a digital map, comprising:

5       a step of representing, concerning a coordinate string including a plurality of nodes corresponding to the shape information, location information of a second node or a subsequent node thereto with a relative location to a starting-end location, using location information of the  
10       stating-end location or location information of another node; and

      a step of representing the location information of the starting-end location with a relative location using another shape information.

15

      2. The shape information coding method according to claim 1, wherein the relative location of the starting-end location is represented by the number of nodes from a reference point of the other shape information.

20

      3. The shape information coding method according to claim 1, wherein the relative location of the starting-end location is represented by a distance from a reference point of the other shape information.

25

4. The shape information coding method according to claim 1, wherein the relative location of the starting-end location is represented by a reference point of the other shape information.

5

5. The shape information coding method according to claim 1, wherein the relative location of the starting-end location is represented by a relative coordinate of the other shape information from a reference point.

10

6. The shape information coding method according to claim 1, wherein the location information of the starting-end location includes identifying information of another shape information that is to be referenced, the number of nodes of the other shape information from a reference point, and a deviation angle from an orientation in the other shape information.

15

7. The shape information coding method as set forth in claim 1, wherein the shape information represented by the relative location is arranged so as to follow another shape information that is to be referenced, and the location information of the starting-end location includes the number of nodes of the other shape information from a reference point and a deviation angle from an orientation in the other shape information.

20

25

8. The shape information coding method according to claim 6 or 7, wherein, when an orientation from a node of the starting-end location toward a next node matches an orientation in the other shape information, the location information of the starting-end location omits the deviation angle from the orientation in the other shape information and includes at least the number of nodes of the other shape information from the reference point.

10

9. The shape information coding method according to claim 1, wherein the location information of the starting-end location includes identifying information of another shape information that is referenced, identifying information indicating a starting-end location or a terminal end location of the other shape information, and an absolute orientation of the starting-end location.

15

10. The shape information coding method according to claim 1, wherein the location information of the starting-end location includes identifying information of another shape information that is referenced, identifying information indicating a starting-end location or a terminal end location of the other shape information, relative location information to the starting-end location or the terminal end location, and an

20

25

absolute orientation of the starting-end location.

11. The shape information coding method according to claim 1, comprising a step of resampling nodes of the other shape information at equal intervals, and a step of correcting the starting-end location so that the starting-end location corresponds to one of the resampled nodes.

12. A program for causing a computer execute the steps of a shape information coding method according to any one of claims 1 through 11.

13. A shape information coding apparatus used for a transmission-side device for coding and transmitting shape information for identifying a location on a digital map, comprising:

a coding section including:

means for representing, with a coordinate string including a plurality of nodes corresponding to the shape information, location information of a second node and a node subsequent thereto by a relative location to a starting-end location that is a first node, using location information of the starting-end location or location information of another node; and

means for representing the location information of the

starting-end location with a relative location using another shape information.

14. A transmission-side device for coding and  
5 transmitting shape information for identifying a location on a digital map, comprising:

a coding section including:

means for representing, with a coordinate string including a plurality of nodes corresponding to the shape  
10 information, location information of a second node and a node subsequent thereto by a relative location to a starting-end location that is a first node, using location information of the starting-end location or location information of another node; and

15 means for representing the location information of the starting-end location with a relative location using another shape information.

15. A shape information decoding method for decoding shape  
20 information for identifying a location on a digital map, the shape information being coded by representing location information of a starting-end location by a relative location using another shape information, the shape information decoding method comprising:

25 a step of decoding the other shape information;

a step of identifying the starting-end location represented by the relative location, using the decoded other shape information; and

a step of decoding the shape information represented by the relative location based on the location information of the starting-end location.

16. The shape information decoding method according to claim 14, wherein the starting-end location represented by the relative location is identified by the number of nodes from a reference point of the other shape information.

17. The shape information decoding method according to claim 14, wherein the starting-end location represented by the relative location is identified by a distance from a reference point of the other shape information.

18. The shape information decoding method according to claim 14, wherein the starting-end location represented by the relative location is identified by a reference point of the other shape information.

19. The shape information decoding method according to claim 14, wherein the starting-end location represented by the relative location is identified by a relative coordinate from

a reference point of the other shape information.

20. A program for causing a computer to execute the steps  
of a shape information decoding method as set forth in any one  
5 of claims 14 through 18.

21. A shape information decoding apparatus used for a  
receiving-side device for decoding shape information for  
identifying a location on a digital map, the shape information  
10 being coded by representing location information of a  
starting-end location by a relative location using another shape  
information, the shape information decoding apparatus  
comprising:

a decoding section including:

15 means for decoding the other shape information;

means for identifying the starting-end location  
represented by the relative location, using the decoded other  
shape information; and

means for decoding the shape information represented by  
20 the relative location based on the location information of the  
starting-end location.

22. A receiving-side device for decoding shape  
information for identifying a location on a digital map, the  
25 shape information being coded by representing location

information of a starting-end location by a relative location using another shape information, the shape information decoding apparatus comprising:

a decoding section including:

5 means for decoding the other shape information;

means for identifying the starting-end location represented by the relative location, using the decoded other shape information; and

10 means for decoding the shape information represented by the relative location based on the location information of the starting-end location.